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Identity of *Aletia distincta* MOORE with Descriptions of Two New Species (Lepidoptera, Noctuidae)

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Abstract Lectotypes of *Aletia distincta* MOORE and *Aletia exanthemata* MOORE are designated. The male and female genitalia of *A. distincta* are shown for the first time. Two new species, closely related to *A. distincta*, are described from India and Taiwan.

Key words Lepidoptera, Noctuidae, *Aletia distincta*, male genitalia, female genitalia, India, Taiwan.

Introduction

Aletia distincta MOORE, 1881, was originally described from Darjeeling. Presently *Aletia exanthemata* MOORE, 1888, is considered as a synonym of *A. distincta*, however, their male genitalia have not been dissected. Recently the author had an opportunity to examine the types of them and it was revealed that there was no doubt concerning this synonymy.

Aletia distincta occurs in Punjab, at Kulu, Sultanpur, Dharmasala, and in Sikkim and Assam, North India (WARREN, 1913). He described two aberrations of *distincta* in it, both of which were shown on a color plate. One is *umbrosa* from the last locality and its forewing has a broad brown shade beyond reniform stigma. The other is *umbridisca* from Shillong and possesses white hindwings. Of course, the name given for an aberration is unavailable under the code of zoological nomenclature.

While investigating the *Leucania*-complex from Asia, the author discovered two new species resembling *A. distincta*, from India and Taiwan. The illustration of the female of *distincta* in WARREN (1913, pl. 11 : e) is very close to the Taiwanese new species dealt in this paper. One of WARREN's aberrations, *umbrosa*, mentioned above, externally seems to be near to the Indian new species.

In this paper lectotypes of *A. distincta* MOORE and *A. exanthemata* MOORE are designated. External characteristics of two new species and the male and female genitalia of *A. distincta* and new species except the unknown female of the Indian new species, are described.

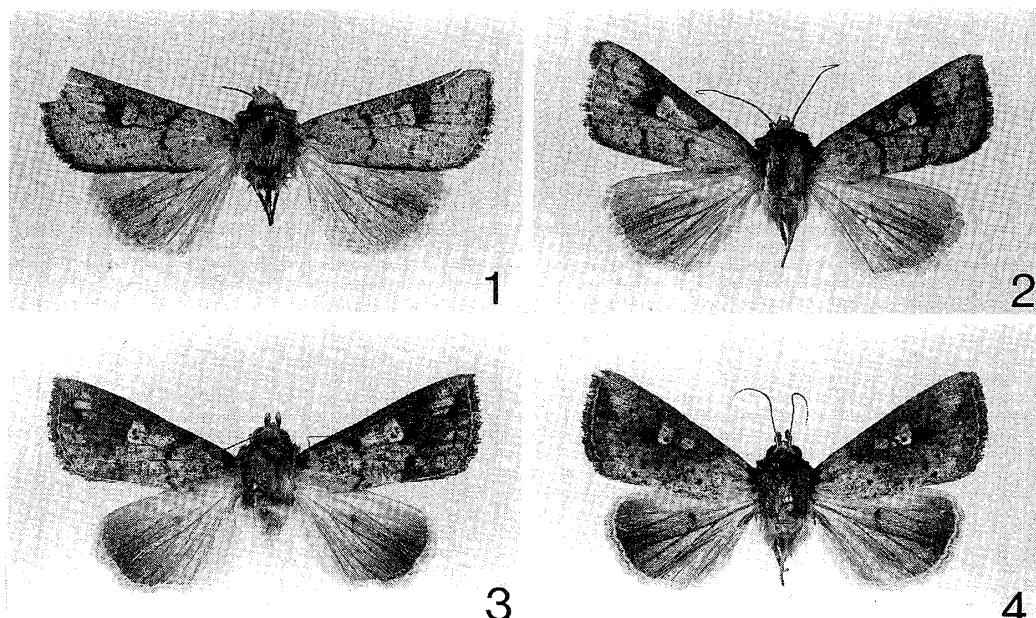


Fig. 1 - 4. *Aletia* spp. 1. *A. distincta* MOORE. Lectotype. 2. *A. distincta* MOORE.
3. *A. speciosa* sp. nov. 4. *A. hannemannii* sp. nov.

Aletia distincta MOORE
(Figs. 1, 2, 5, 6)

Aletia distincta MOORE, 1881, *Proc. zool. Soc. Lond.* 1881 : 333, pl. 37, fig. 4.

Aletia distincta : MOORE, 1882, in HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr. W. S. ATKINSON* : 97 - 98.

Aletia exanthemata MOORE, 1888, *Proc. zool. Soc. Lond.* 1888 : 410 - 411.

Leucania distincta : HAMPSON, 1894, *Fauna Br. India (Moths)* 2 : 277.

Chabuata distincta : HAMPSON, 1905, *Cat. Lepid. Phalaenae Br. Mus.* 5 : 263.

Hyphilare distincta : WARREN, 1913, in SEITZ, *Macrolepid. World* 11 : 89, pl. 11, rows e, f.

Length of forewing. 14.7 - 16.9 mm., av. 15.9 mm.

Male genitalia. Tegumen slender in lateral view; vinculum moderately broad in lateral view with short dorsal arm; saccus moderately large. Uncus moderately long and falcate with hairs on distal half. Valva except cucullus a little roundly bulged ventrally; costa slightly curved; editum large with many hairs; ampulla long, slightly curved ventrally and its distal 2/3 beyond the posterior margin of valvula; sacculus slightly broad, and its dorsal margin swollen at the middle; harpe moderately long with rounded ventral margin, dorsal process of harpe moderately long and slightly curved posteriorly; valvula moderately broad with narrow membranous area; cucullus moderately large, protruded dorsoposteriorly and acutely protruded ventroanteriorly, a small process on the posterior portion, many diffused coronal spines except the dorsoposterior portion, and its basal arm moderately long. Juxta trapezoid, produced at the middle of the posterior margin. Phallus unmodified; vesica moderately long, about 1.3 times as long as aedeagus when everted, with a short

Identity of *Aletia distincta*

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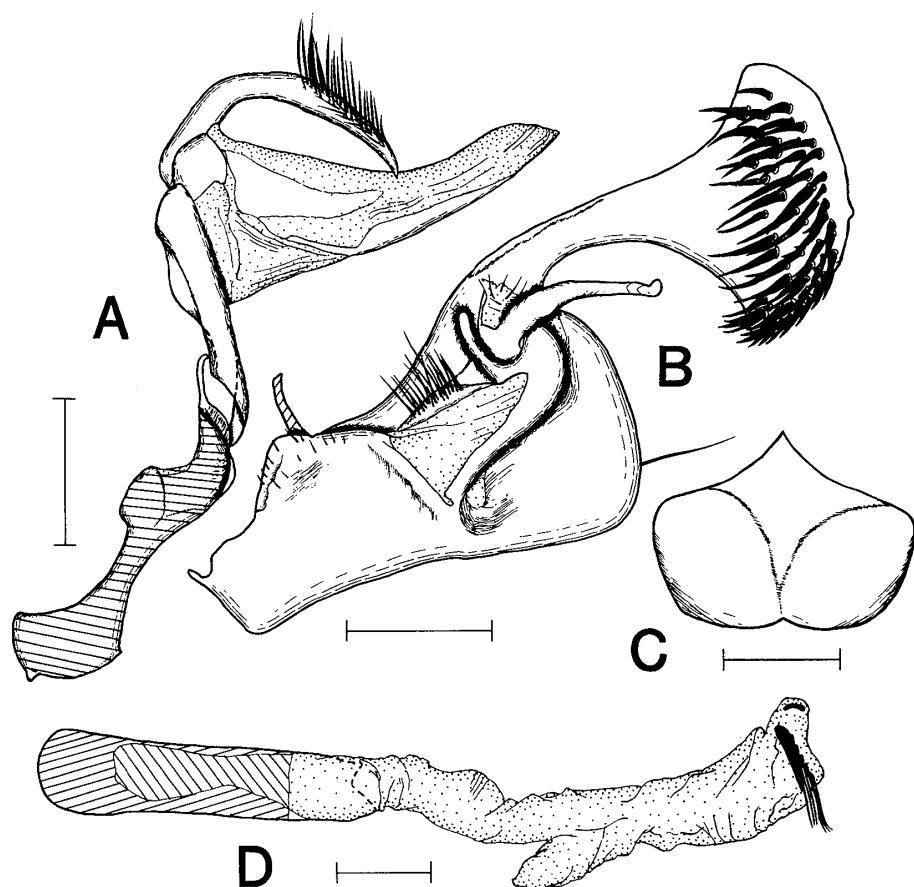


Fig. 5. Male genitalia of *A. distincta* MOORE. A. Ring in lateral view; B. Right valva in inner view; C. Juxta; D. Phallus in dorsal view. Scales: A, B & D. 1 mm; C. 0.5 mm.

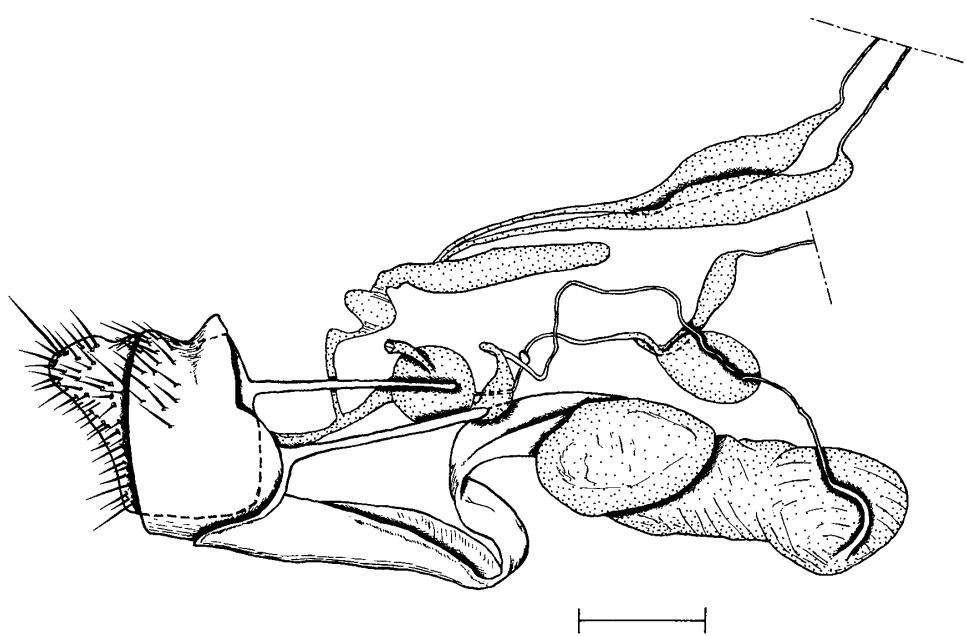


Fig. 6. Female genitalia of *A. distincta* MOORE. Scale 1 mm.

diverticulum at the middle, bearing dense spinules on entire surface beginning at the top of the diverticulum and extending to distal end, and slightly short spines at distal end.

Female terminalia and genitalia. Seventh abdominal tergum and sternum unmodified. Eighth abdominal tergum unmodified ; apophysis anterioris very long. Ductus bursae sclerotized and curved dorsally before antrum ; ostium bursae unmodified. Ductus seminalis long and bulged near vagina. Corpus bursae rounded ; cervix bursae large and membranous. Papilla analis unmodified ; apophysis posterioris very long.

Lectotype designation. Lectotype of *distincta* MOORE, ♂, Darjiling, coll. ATKINSON : depository, Museum für Naturkunde der Humboldt-Universität, Berlin, here designated ; Lectotype of *exanthemata* MOORE, ♂, Dharmasala : depository, British Museum (Natural History), London, here designated.

Specimens examined. [Nepal] 2♀, Thame Og 3800m, Solukhumbu, Sagarmatha, 1-2. x. 1979, M. OWADA ; 3♀, Kharikhola 1980m, Solukhumbu, Sagarmatha, 7. x. 1979, M. OWADA ; 1♀, Ringmo 2780m, Solukhumbu, Sagarmatha, 9. x. 1979, M. OWADA ; 1♀, Junbesi 2670m, Solukhumbu, Sagarmatha, 10-11. x. 1979, M. OWADA ; 1♀, Sete 2600m, Solukhumbu, Sagarmatha, 12. x. 1979, M. OWADA ; 1♂, Okhureni 2000m, Mt. Siwapuri, Nr Kathmandu, 6. x. 1981, M. OWADA ; 1♀, Deolari 2800m, Ghorapani, Parbat Dist., Gandaki, 15. x. 1981, M. OWADA. [India] 4♂, West Bengal, Darjeeling 2100m, 8. ix. 1983, M. OWADA.

Distribution. India and Nepal.

Remarks. The male of *A. distincta* has a pair of basal black tufts on the abdomen ventrally and the male also possesses slight silvery scales on the undersides of the wings. WARREN (1913) reported nine such species besides *distincta* from Indo-Australian region. The black tufting and silvery scales also can be seen in the following two new species.

Aletia speciosa sp. nov.

(Figs. 3, 7)

Length of forewing. 16.4 mm.

Male. Frons ochreous with fuscous scales laterally ; vertex ochreous brown. Thorax yellowish brown ; tegula with spatulate fuscous scales. Abdomen ochreous white, tinged with rufous brown and with ventral black hair tufts basally. Forewing brownish yellow ; subbasal line represented by a black spot on costa ; antemedial line represented by a fuscous line ; a short white streak of distal portion on median nervure with two black points upper it, beyond which is rufous ; orbicular and reniform yellow ; costal portion in median area reddish brown ; postmedial line represented by black spots on veins ; a broad fuscous brown shade from termen below apex ; terminal line represented by black spots on interspaces ; cilia fuscous brown. Underside of forewing ochreous white, tinged with rufous and with silvery scales except costal area ; costal area irrorated with fuscous ; postmedial line represented by a large black spot

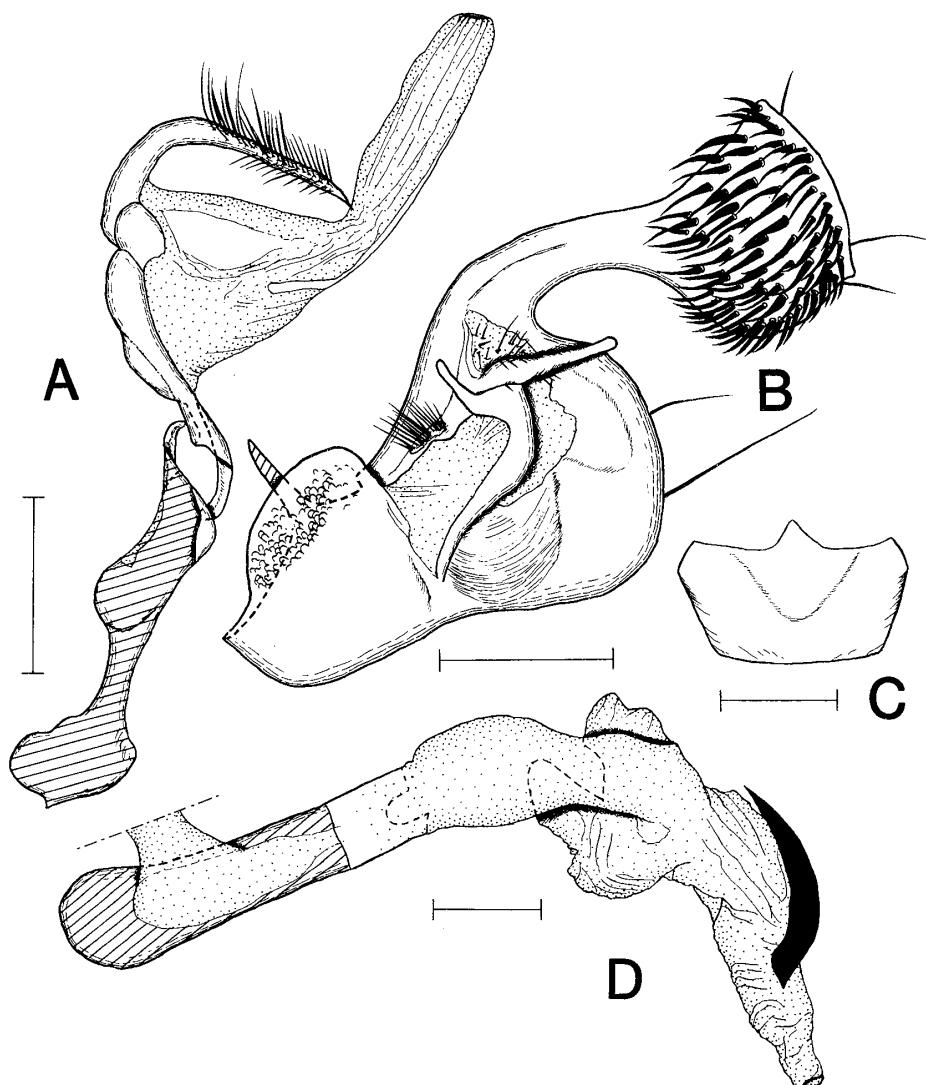


Fig. 7. Male genitalia of *A. speciosa* sp. nov. A. Ring in lateral view; B. Right valva in inner view; C. Juxta; D. Phallus in dorsal view. Scales: A, B & D. 1 mm; C. 0.5 mm.

on costa and small black spots on veins; terminal line represented by black spots on interspaces; cilia fuscous brown. Hindwing fuscous on outer half, basal area slightly whitish; a fuscous discoidal cell; cilia ochreous white with a faint fuscous transverse band in the middle. Underside of hindwing ochreous white, costal and outer area slightly tinged with rufous and with slight silvery scales entirely; a fuscous discoidal cell; postmedial line represented by small black spots on veins; terminal line represented by black spots on interspaces; cilia ochreous white.

Female. Unknown.

Male genitalia. Tegumen slender in lateral view; vinculum moderately broad in lateral view with short dorsal arm; saccus moderately large. Uncus moderately long and falcate with hairs on distal half. Valva except cucullus roundly bulged ventrally; costa slightly curved; editum small with many hairs; ampulla moderately long,

almost straight and slightly beyond the posterior margin of valvula ; sacculus slightly broad, and its dorsal margin swollen at the middle ; harpe moderately long with blunt ventral margin, dorsal process of harpe short ; valvula slightly broad with narrow membranous area ; cucullus moderately large and bulged ventrally with an acute dorsoposterior corner, a small process on the ventroposterior portion, many diffused coronal spines on its almost entire surface except the basal arm and a few spines marginally, and its basal arm slightly short and curved ventrally. Juxta trapezoid, produced at the middle of the posterior margin. Phallus unmodified ; vesica moderately long, about 1.5 times as long as aedeagus when everted, with two tubular diverticula at the middle, bearing dense spinules on entire surface beginning at the tops of the diverticula and extending to distal end, and a very large falcate spine at distal end.

Holotype : ♂, India, West Bengal, Darjeeling 2100m, 8. ix. 1983, M. OWADA.

Type depository : National Science Museum, Tokyo.

Distribution. India.

Remarks. The cornutus of this species is very large and stout. Two diverticula are provided with the vesica in *speciosa*, while single diverticulum is seen in *distincta* and *hannemanni*.

The shape of valva of this species is very similar to that of following new species, however, in this species the harpe is only slightly beyond the posterior margin of valvula.

Aletia hannemanni sp. nov.

(Figs. 4, 8, 9)

Length of forewing. 15.3 – 16.2 mm., av. 15.8 mm.

Male. Frons ochreous with fuscous scales apically ; vertex ochreous, mixed with fuscous scales. Thorax brownish yellow ; tegula with spatulate fuscous scales along inner side and slightly fuscous along outer side. Abdomen ochreous brown, tinged with fuscous and with ventral black hair tufts basally. Forewing brownish yellow, tinged with rufous ; a prominent basal black spot ; subbasal line represented by a black spot on costa ; antemedial line represented by a fuscous line upper median nervure and black spots between vein 1 and 2 and on vein 1 ; a short white streak of distal portion on median nervure with a black point just upper it, beyond which is fuscous ; orbicular and reniform yellow, medial area brown, tinged with rufous ; postmedial line represented by black spots on veins ; a fuscous brown triangular shade from termen below apex ; subterminal area brown, tinged with rufous ; terminal line represented by black spots on interspaces ; cilia fuscous brown. Underside of forewing ochreous white, tinged with rufous and with slight silvery scales except costal area, costal area irrorated with fuscous, discal area fuscous ; postmedial line represented by a black spot on costa and small black spots on veins and faint fuscous line on interspaces ; terminal line represented by black spots on interspaces ; cilia fuscous brown. Hindwing fuscous on outer half, basal area slightly whitish ; a fuscous discoidal cell ; cilia ochreous white with a fuscous transverse band in the middle. Underside of

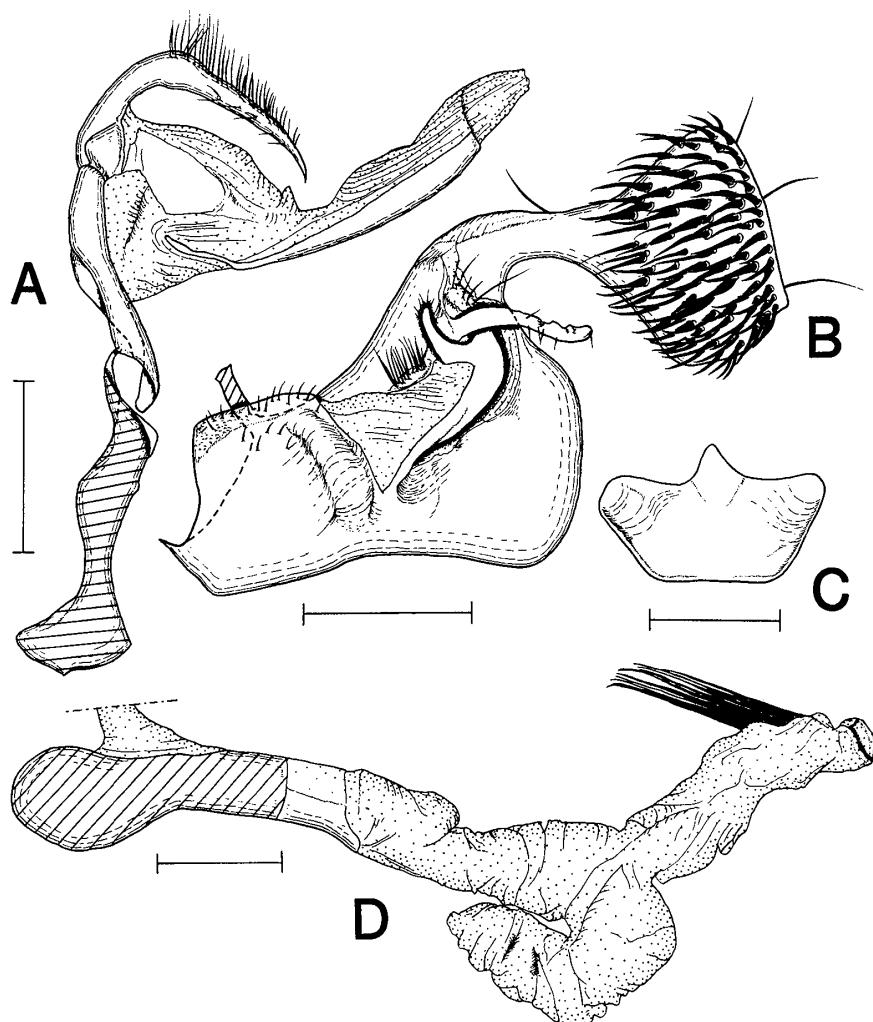


Fig. 8. Male genitalia of *A. hannemanni* sp. nov. A. Ring in lateral view; B. Right valva in inner view; C. Juxta; D. Phallus in lateral view. Scales: A, B & D. 1 mm; C. 0.5 mm.

hindwing ochreous white, costal and outer area slightly tinged with rufous and with slight silvery scales entirely; a fuscous discoidal cell; a fuscous postmedial line; terminal line represented by black spots on interspaces; cilia ochreous with a slightly fuscous line through them.

Female. Abdomen without ventral black hair tufts basally.

Male genitalia. Tegumen slender in lateral view; vinculum moderately broad in lateral view with short dorsal arm; saccus moderately large. Uncus moderately long and falcate with hairs on distal half. Valva except cucullus roundly bulged ventrally; costa slightly curved; editum small with many hairs; ampulla slightly long, curved ventrally and its distal half beyond the posterior margin of valvula; sacculus slightly broad, and its dorsal margin swollen at the middle; harpe moderately long with rounded ventral margin, dorsal process of harpe short, and slightly curved posteriorly; valvula moderately broad with narrow membranous area; cucullus moderately large

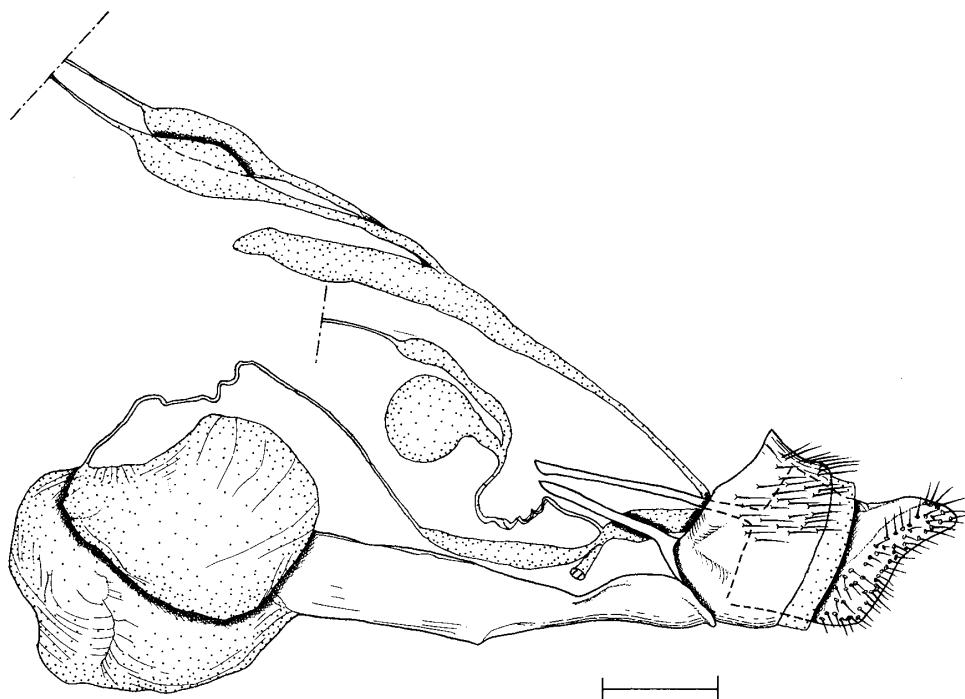


Fig. 9. Female genitalia of *A. hannemanni* sp. nov. Scale 1 mm.

and bulged ventrally with a small process on the ventroposterior portion, many diffused coronal spines on its almost entire surface except the arm and a few spines marginally, and its basal arm slightly short and curved ventrally. Juxta trapezoid, produced at the middle of the posterior margin. Phallus unmodified; vesica moderately long, about 1.5 times as long as aedeagus when everted, with a tubular diverticulum at the middle, bearing dense spinules on entire surface beginning at the top of the diverticulum and extending to distal end, and long slender spines and a large spine at distal end.

Female terminalia and genitalia. Seventh abdominal tergum and sternum unmodified. Eighth abdominal tergum unmodified, apophysis anterioris moderately long. Ductus bursae sclerotized and slightly curved dorsally before antrum; ostium bursae unmodified. Ductus seminalis long and bulged near vagina. Corpus bursae rounded; cervix bursae short, membranous and rounded. Papilla analis unmodified; apophysis posterioris very long.

Holotype: ♂, Taiwan, Ssuchungchi-wenchuan, Pintung Hsien, 27. iii. 1984, S. Horiguchi, I. Sagara & Y. Matsukura.

Type depository: Laboratoy of Insect Systematics, National Institute of Agro-Environmental Sciences, Tsukuba.

Paratypes: 1♂ 1♀, Taiwan, Chiayi, Mt. Alishan, 23–26. iii. 1972, M. Owada.

Distribution. Taiwan.

Remarks. The coronal spines of this species and *speciosa* cover even the marginal portion of the cucullus. In *distincta*, however, posterior portion of the cucullus lacks corona. The cornuti of this species are longer than those of *distincta*. The specific

name is dedicated to Dr. H. J. HANNEMANN.

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I would like to express my cordial thanks to Dr. H. J. HANNEMANN of Museum für Naturkunde der Humboldt-Universität, Berlin, for his kindness in lending the type specimen of *Aletia distincta* MOORE. I thank Mr. M. R. HONEY of the British Museum (Nat. Hist.), London, for the loan of the type specimen of *Aletia exanthemata* MOORE. My cordial thanks are also due to Dr. M. OWADA of the National Science Museum, Tokyo, for the loan of valuable material. I am grateful to Mr. I. SAGARA, Hiroshima, for providing specimen of *hannemanni*. I am indebted to Dr. A. LEGRAIN, Belgium, for his invaluable information on this group.

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摘要

Aletia distincta MOORE の再記載とこれに近縁な 2 新種の記載 (鱗翅目・ヤガ科)
(吉松 慎一)

Aletia distincta は MOORE (1881) によりダージリンより記載された。*Aletia exanthemata* MOORE, 1888 は現在そのシノニムとして扱われている。著者はこれらのタイプ標本を調査する機会に恵まれ、ここに後模式標本を指定するとともに、雄交尾器の比較により、そのシノニム関係が疑いのないことを示した。

ところでアジア産のキヨトウ類 (*Leucania*-complex) を調査していたところ、*distincta* に近縁な 2 新種を発見した。1種はインドからの *speciosa* sp. n. で、もう 1種は台湾産の *hannemanni* sp. n. である。これら 3種の雄は腹部腹方基部に黒色の毛束を持ち、また翅の裏面に銀鱗を備えるが、WARREN (1913) は *distincta* の他にそのような形質を備えるものとしてインド・オーストラリア区より 9種を挙げている。

本論文で扱った 3種の形態的差異は以下のとおりである。外見的な差としては、*distincta* の前翅はほぼ一様な黄褐色だが *speciosa* では外横線にそって黒褐色の帯があり、*hannemanni* では前翅中央部が黒褐色となる。雄交尾器においては *cucullus* の形態および *coronal spine* の配列の仕方、*cornuti* の長さ等がこれら 3種の主な区別点となる。*Speciosa* の雌は未知であり、他の 2種の雌の交尾器は *ductus seminalis* の *cervix bursae* における付着位置等により区別することができる。

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